BURGAS STATE UNIVERSITY "PROF. DR. ASSEN ZLATAROV"

APPROVED

RECTOR:

(Prof. DR. Sotir Sotirov)

QUALIFICATION CHARACTERISTICS

of the specialist with professional qualification:

"COMPUTER ENGINEER"

Area of Higher Education:	**5. TECHNICAL SCIENCE**
Professional Field:	**5.3. COMMUNICATION AND COMPUTER TECHNIQUES**
	Level 6, Sub-level 6Б
	Under the National Qualifications Framework
Speciality:	**ARTIFICIAL INTELLIGENCE AND VIRTUAL REALITY (2 SEMESTERS)**
Educational Qualification Degree:	**MASTER OF SCIENCE**
Professional Qualification	**COMPUTER ENGINEER**
Form of Education	**Full-time (Part-time)**

Burgas, 2026

AIM OF THE SUBJECT

The current qualification characteristic of a computer engineer with the educational qualification degree "Master Engineer" (MSc) in the specialty "Artificial Intelligence and Virtual Reality" defines the professional purpose, qualification requirements, and training objectives, as well as the areas of professional realization.

This program emphasizes specialization in the field of Artificial Intelligence and Virtual Reality, preparing graduates to work in all areas where intelligent decision-making processes are implemented using artificial intelligence and virtual reality technologies.

DESIGNATION OF THE SPECIALIST

Professional purpose of the education program: the training of MSc in "Artificial Intelligence and Virtual Reality" is designed to prepare staff with very good general technical and research knowledge in IT - technology, to know the theoretical foundations of artificial intelligence, modeling and design of databases, to apply technologies tor knowledge extraction, machine self-learning. image processing and image recognition, embedded and autonomous systems. neural networks and genetic algorithms. programming, robotics, working with specialized software for 3D modeling, 3D printing and 3D digitization .

The computer engineer in the specially is prepared to organize, manage and perform research. programming, production research and other activities in the field of artificial intelligence and virtual reality. The MSc will be able to:

- organize and carry out scientific research, forecasting and planning; create and use technical and software tools for biometric systems;
- implement software for data analysis and knowledge extraction from data; create software for semantic web and semantic network services;
- work with intelligent search engines and intelligent user interfaces;
- work both on the creation and in the operation of expert systems, recommending systems, intelligent learning environments and other types of software systems based on knowledge;
- work with smart databases;
- apply various weans for image processing and image recognition;
- design and implement different types of intelligent embedded systems: intelligent robots, "smart home" systems and many more. etc.

The Master's degree program in " Artificial Intelligence and Virtual Reality" is completed over a period of one academic year and leads to the award of the educational and qualification degree of Master.

The curriculum comprises 15 courses, including both compulsory and elective subjects, one practical training course, and one industrial internship.

The compulsory courses provide the core professional training, while the elective courses offer opportunities for specialization in the fields of computer systems and information technologies.

The program concludes with the defense of a Master's thesis during the second semester.

A. KNOWLEDGE

A graduate with a Master of Science degree in "Artificial Intelligence and Virtual Reality" must have a strong profile in general theoretical and technical training and be well-acquainted with processes in the fields of intelligent systems and virtual reality.

The Master Engineer is expected to:

- Have detailed knowledge of the hardware and architectures of biometric systems.
- Possess in-depth understanding of the system and application software for systems with intelligent behavior.
- Apply methods and tools for knowledge acquisition and image recognition.
- Be proficient in the theory of artificial intelligence and virtual reality.
- Have a strong understanding of the theory of expert systems.
- Master the theory of embedded systems

B. SKILLS

A graduate with a Master of Science degree in "Artificial Intelligence and Virtual Reality" must have a solid foundation in both general theoretical and technical training and be well-versed in processes related to intelligent systems and virtual reality.

C. Personal and Professional Competencies

C.1. Autonomy and Responsibility

- Demonstrate the ability to administratively manage various professional activities in the course of their professional practice.
- Take responsibility when making decisions in complex situations.
- Demonstrate creativity and initiative in managerial activities.
- Assess the need to train others in order to improve team effectiveness.

C.2. Learning Competencies

- Consistently evaluate their own qualifications by assessing the knowledge and skills acquired to date and planning the need to expand and update their professional qualifications.
- Select appropriate forms and programs for continuing education in accordance with the National Qualifications Framework and the European Qualifications Framework.

C.3. Communication and Social Competencies

- Clearly and effectively formulate and present ideas, problems, and solutions to both specialists and non-specialists.
- Express informed opinions and demonstrate understanding of issues in the fields of cybersecurity and secure coding related to the protection and maintenance of specialized software systems.
- Communicate effectively in some of the most widely spoken European languages, particularly English.

C.4. Professional Competencies

- Collect, classify, evaluate, and interpret data in the fields of cybersecurity and secure coding to solve specific tasks related to the protection and maintenance of software systems.
- Apply the acquired knowledge and skills in new environments involving modern high-tech systems, demonstrating the ability to analyze issues within a broader or interdisciplinary context.
- Employ innovative strategic approaches and express independent opinions on social and ethical issues arising in the course of professional practice.

AREA OF REALIZATION

Graduates of the educational qualification degree "Master of Science" in the specialty "Artificial Intelligence and Virtual Reality" are prepared to be successfully realized in the IT field, in the operation of intelligent behavior systems, in the realization of software products with virtual reality. They can apply the acquired knowledge and skills in the development of scientific and educational organizations, in leading companies in the field of software technology. in the development of intelligent behavior systems, knowledge extraction software, expert systems, intelligent embedded systems, biometric systems and note. The graduates will have the necessary knowledge to implement projects in the field of artificial intelligence and virtual reality in the development of desktop, web-based and mobile applications. Graduates can continue their education in the educational qualification degree "PhD" at Burgas State University "Prof. Dr. Assen Zlatarov".

The Qualification Profile was approved by the Department Council of the Department of Computer Systems and Technologies, Minutes No. 14/03.07.2026, by the Faculty Council of the Faculty of Technical Sciences, Minutes No. 42./09.07.2026, and by the Academic Council of Burgas State University "Prof. Dr. Assen Zlatarov", Minutes No. 64./23.07.26.

Head of Department:.....

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Dean:.....

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